Proposed Quality Committee changes to the *Guidelines for the development and approval of STEP application protocols,* SC4 N535

Foreword, page iv

In the list of standing documents in the foreword, replace the reference to "Guidelines for the development of mapping tables" to the new version of the document as shown below.

— Guidelines for the development of mapping ~~tables~~specifications, 2nd edition;

Clause 1, page 2

In the list of out-of-scope items, make the corrections shown below in redline/strikeout.

— detailed guidance on the development of mapping ~~tables~~ specifications for ISO 10303 application protocols;

NOTE 3 - This information is covered in greater detail in *Guidelines for the development of mapping ~~tables~~specifications, 2nd edition*.

Clause 2, page 2

In the list of normative references, replace the reference to "Guidelines for the development of mapping tables" to the new version of the document as shown below. Replace footnote here with publication details once known.

ISO TC 184/SC4 ~~N533:1997~~[1], *Guidelines for the development of mapping ~~tables~~specifications, 2nd edition*

Clause 4.5.1, page 13; TOC, page ii

Replace the term "mapping table" with the term "mapping specification" and rephrase as necessary. Change clause title to "Mapping specification" in the text and in the table of contents.

4.5.1 Mapping table

Clause 5.1 of an AP shall ~~specify~~ document the mapping ~~table~~specification. The mapping ~~table~~ specification documents the correspondence between the information requirements and the constructs of the AIM. This mapping ~~table~~ specification shall specify a complete and unambiguous mapping between the application objects and assertions defined in the information requirements clause and the constructs of the AIM. The mapping shows how the integrated resource constructs are used to meet the information requirements of the application.

Clause 5, figure 1, page 17

Replace this figure with the correct figure. The figure shown is figure 3.

Clause 5, figure 3, page 19

In the figure, replace the term "mapping table" with the term "mapping specification."

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[1] To be published.

ISO TC 184/SC4 N1040
2000-06-05

Clause 5.4, page 31

Replace the term "mapping table" in the first bullet with the term "mapping specification."

5.4 Development and review of the application interpreted model

The application interpreted model (AIM) is an EXPRESS schema which specifies the interpretation of the integrated resources to satisfy the information requirements of the AP. The AIM specifies the implementable constructs of the AP. The AP team shall produce the AIM. The documentation for an AIM includes six components:

— mapping ~~table~~specification;

Clause 5.4.1, second to last bullet, page 34

Replace the term "mapping table" with the term "mapping specification" and rephrase as necessary.

— Develop mapping ~~table~~ specification ~~(~~see 5.4.2): While the AIM is developed, the AP team shall record ~~in a table~~ in clause 5.1 of the AP document the selections and specializations made from the integrated resources to establish correspondence to each information requirement. This mapping will list each information requirement and its corresponding AIM construct(s). If a path of entity references in the AIM must be followed to completely satisfy a particular requirement as it is given in the ARM, the mapping ~~table~~ specification shall indicate the complete reference path which needs to be given to represent the required information in the AIM.

Clause 5.4.2, pages 34-37; TOC, page ii

Replace 5.4.2 with the following text. The text has been edited to remove reference to table components including replacing the term "mapping table" with the term "mapping specification." Change clause title to "Mapping specification" in the text and in the table of contents.

5.4.2 Mapping specification

During the interpretation of the integrated resources, the mapping of the correspondence between the application objects and the constructs of the AIM shall be documented and maintained. The resultant mapping ~~table~~ specification shows the AIM construct(s) required for each application object. See *Guidelines for the development of mapping ~~tables~~ specifications, 2nd edition* for details on the development and documentation of mapping ~~tables~~specifications.

In EXPRESS, a single attribute or entity may not be enough to establish a full understanding of a concept. Although a single attribute or entity may be the AIM construct to which an ARM construct maps, that attribute or entity will not provide all of the information necessary to completely understand the semantic. ~~The specification of a~~A reference path is provided in the mapping ~~table~~ specification ~~occurs~~ when an attribute in the ARM and the entity to which it belongs do not correspond to the same entity in the AIM. Often an attribute in the ARM is developed at a higher level of detail than the integrated resources. In this case, the reference path is provided so that the complete semantic (including the relationship of the attribute to the entity in the ARM) is represented in the mapping ~~table~~specification. Additionally relationships in the ARM will always have reference paths to show the complete set of entity instances required in the AIM to satisfy the relationship, subtypes created in the AIM will show the supertype from the integrated resources in the reference path and any mapping rules or choices will be specified in the reference path.

The example ~~table~~ mapping specifications below (see ~~Table 2 and 3~~example 1 and 2) illustrate~~s~~ a number of types of mappings that will be found in ~~the mapping table of~~ an application protocol. ~~Two units of functionality are given, Advanced_b_rep and Authorization.~~ The mappings of two application elements from ISO 10303-203, ADVANCED_B_REP and APPROVAL, from the Advanced_boundary_-

representation and Authorization units of functionality are provided. The mappings are described as follows:

— The application element ADVANCED_B_REP maps to the AIM entity advanced_-brep_representation. The source ~~column~~ value denotes that the AIM entity advanced_-brep_representation is an AP specialization, originating in ISO 10303-203. This specialization requires a reference path from the integrated resource entity from which it is specialized. The reference path denotes that the AIM entity advanced_brep_representation is a subtype of the integrated resource entity shape_representation.

— The application element APPROVAL maps to the AIM entity cc_design_approval. The source ~~column~~ denotes that the AIM entity cc_design_approval originates in ISO 10303-203. This specialization requires a reference path from the integrated resource entity to the specialized subtype. ~~Rules 1 and 2 which are found at the end of the table~~The rules referenced (by subclause number) in the mapping specification constrain the use of the approval structure.

NOTE – In the second edition of ISO 10303-203 the AIM entity cc_design_approval will be renamed applied_approval due to AP interoperability agreements

— The application element APPROVAL has an attribute date which maps to the date entity in the AIM. The date entity originates in ISO 10303-41 as indicated in the source ~~column~~entry. Since the attribute maps to an entity in the AIM, a reference path is given from the entity cc_design_approval (this is the entity to which the application element APPROVAL was mapped) to the date entity (this is the entity to which the ARM attribute date is mapped). The reference path is to be read as follows:

a) cc_design_approval is a subtype of approval assignment,

b) approval_assignment has an attribute named assigned_approval that references the entity approval,

c) approval is referenced by the attribute dated_approval in the entity approval_date_time,

d) approval_date_time has an attribute named date_time which references a select type called date_time_select,

e) in this case, the date_time_select, references the date_and_time entity,

f) the date_and_time entity has an attribute named date_offset that references the entity date~~,~~.

~~g) the attribute date_offset references the entity date.~~

— The application element APPROVAL has an attribute purpose which maps to the purpose attribute of the approval entity in the AIM. The source of the attribute purpose in the entity approval is ISO 10303-41.

STEP experts and application experts shall review the mapping ~~table~~ specification to ensure that ~~they are~~it is complete and correct. The mapping is complete when each ARM construct has an equivalent construct(s) in the AIM.

Clause 5.4.2, tables 2 and 3, page 36; TOC page iii

Replace the tables with equivalent mapping specifications illustrating the clause layout. Remove tables 2 and 3 from the table of contents.

EXAMPLE 1 –

5.1.1 Advanced_boundary_representation UoF

5.1.1.1 ADVANCED_B_REP

AIM element: advanced_brep_representation
Source: ISO 10303-514
Reference path: shape_representation=>
advanced_brep_representation

EXAMPLE 2 –

5.1.2 Authorization UoF

5.1.2.1 APPROVAL

AIM element: cc_design_approval
Source: ISO 10303-203
Rules: 5.2.4.32, 5.2.4.33
Reference path: approval_assignment =>
cc_design_approval

5.1.2.1.1 date

AIM element: date
Source: ISO 10303-41
Reference path: cc_design_approval<=
approval_assignment
approval_assignment.assigned_approval->
approval<-
approval_date_time.dated_approval
dated_approval
approval_date_time.date_time->
date_time_select
date_time_select=date_and_time
date_and_time
date_and_time.date_offset->
date

5.1.2.1.2 purpose

AIM element: approval.purpose
Source: ISO 10303-41
Reference path: cc_design_approval<=
approval_assignment
approval_assignment.assigned_approval->
approval
approval.purpose

Clause 5.6.1, page 44

In the fourth paragraph from the bottom of 5.6.1, replace the term "mapping table" with the term "mapping specification."

Clause 6 records the interpretation of the integrated resources to meet the information requirements of the

AP and the resolutions to problems identified during the interpretation process. This clause shall include sections of the AP's mapping ~~tables~~ specification and explanations necessary to clarify the rationale for selections from the integrated resources and modifications to the integrated resources.